Management of Vascular Complications During TAVI

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Disclosure

Speaker name:

....Marco Roffi..........................................................................

I have the following potential conflicts of interest to report:

X  Institutional research grants from Abbott Vascular, Boston Scientific, Terumo, Medtonic, Biotronik
FRANCE TAVI

- N=12,804, enrollment 2013-2015
- Rates of complications requiring surgical or percutaneous interventions
  - bleeding 8.9%
  - vascular complications 7.7%

Auffret V et al. JACC 2017;70:42–55

TAVI Vascular Complications in Germany

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<td></td>
<td>n = 10 286</td>
<td>n = 13 132</td>
<td>n = 15 043</td>
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<td>8.3% (854)</td>
<td>8.5% (1117)</td>
<td>7.1% (1065)</td>
<td>&lt;0.001</td>
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Gaede L et al. EHJ 2018; 39:667–75
Preventing Prior to Managing Vascular Complications: Ultrasound-Guided Puncture

Main advantage of US:
- Identify the bifurcation
- Identify precisely the location of plaque or calcifications

CT scan of the entire aorta mandatory for valve sizing and assessment of the ilio-femoral vasculature (vessel caliber, calcifications, tortuousity, location femoral bifurcation)

Access with micropuncture kit
Oxford TAVI registry: Impact of Ultrasound-Guided Vascular Access

- 529 cases performed in 2015-2018
- Ultrasound-guidance independently associated with threefold reduction in vascular access complication (OR = 0.29, CI:0.15–0.55, p < .001).
Good Option to Prevent/Treat Complications: Contralateral Crossover Access

• Additional access needed anyway for angiographic control while positioning the valve
• In addition, crossover access allows for
  – Control angiogram of the large-bore puncture site
  – Rapid management of complications
Good Option to Prevent/Treat Complications: Contralateral Crossover Access

• Additional access needed anyway for angiographic control while positioning the valve
• In addition, crossover access allows for
  – Control angiogram of the large-bore puncture site
  – Rapid management of complications
• **Degrees of readiness varies according to the institutions**
  – No crossover access
  – Crossover + 0.014 inch / 0.018 wire in the ipsilateral SFA
  – Routine balloon inflation in the external iliac artery prior to sheath removal
  – Routine balloon inflation + wire
Crossover Proximal Balloon Occlusion
“Minor Leak”
“Minor Leak”

Protamine + balloon occlusion (proximal or low pressure at the puncture level (depending also on the size of the balloon)
Perforation
Covered Stent
Ilio-Femoral Occlusion
Ilio-Femoral Occlusion
Post stenting
Small Leak and Severe Stenosis Post Prostar?
Spasm!
Pseudoaneuovrysm
Pseudoaneuverysm: Covered Stent
Sometimes you get scared for nothing.....

Very diseased CFA, high puncture site

Final result post TAVI
Conclusions: Management of Vascular Complications During TAVI

• Incidence ↓

• Prevention
  • CT scan study
  • Ultrasound-guided puncture
  • Crossover access for hemostasis

• Treatment
  • Be ready (covered stents)
  • Be in good terms with your vascular surgeon because (very rarely) you might need him
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